Noise element of the general plan for the city of Moorpark. 1987.

STATE OF CALIFORNIA)
COUNTY OF VENTURA) SS.
CITY OF MOORPARK)

I, Inez Bryson, Deputy City Clerk of the City of Moorpark, California, do hereby certify that the foregoing Resolution No. 86-343 was adopted by the City Council of the City of Moorpark at a regular meeting thereof held on the 6th day of October, 1986, and that the same was adopted by the following roll call vote:

AYES: Mayor Ferguson, Councilmembers Woolard, Prieto, Yancy-Sutton and Hartley

NOES: None

ABSENT: None

WITNESS my hand and the official seal of said City this 6th day of October, 1986.

Inez Bryson
Deputy City Clerk

(SEAL)

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INTRODUCTION

Physical health, psychological stability, social cohesion, property values, and economic productivity are factors affected by excessive amounts of noise. Noise, as it has been simply defined, is "unwanted sound". It is an undesirable byproduct of transportation elements and industrial activities within the community that permeates man's environment and causes disturbance. The full effect of such noise on the individual and the community will vary with its duration, its intensity, and the tolerance level of the individual.

AUTHORIZATION

Recognizing the increasing human environmental impacts of noise pollution and the impact that local agency land uses and circulation plans have on the community's environmental quality, the California Legislature, in 1972, mandated that a noise element be included as part of the City and County general plans. Guidelines have been prepared as a result of Senate Bill 860(A) (effective January 1, 1976) by the Office of Noise Control, State Department of Health, concerning the specific requirements for a noise element which are responsive to State guidelines. Within the City of Moorpark, the Planning Department is responsible for the coordination of all local noise control activities.

PURPOSE

The purpose of the Noise Element is to serve as an official guide to the City Council, the Planning Commission, City departments, individual citizens, businessmen, and private organizations concerned with noise pollution within the City of Moorpark. The

Noise Element provides a reference to be used in connection with actions on various public and private development matters as required by law, and is utilized to establish uniformity of policy and direction within the City concerning actions to minimize or eliminate excessive noise and for making decisions regarding proposals which may have an impact on the City's environment.

The Noise Element includes definitions, objectives, policies, standards, criteria, programs, and maps which are to be considered when decisions are made affecting the noise environment within the City of Moorpark.

DEFINITIONS

The following common terms are used throughout the Noise Element:

Ambient Noise - The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Amplitude - A measure of the difference between atmospheric pressure (with no sound present) and the total pressure (with sound present). Although there are other measures of sound amplitude, sound pressure is the fundamental measure. The unit of sound pressure is the decibel (dB).

A-Weighted Sound Pressure Level, dB(A) - The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Community Noise Equivalent Level (CNEL) - The average, equivalent A-weighted sound level during a 24-hour day obtained by adding five decibels to the hourly noise levels measured during the evening (from 7:00 p.m. to 10:00 p.m.) and by adding ten decibels to the hourly noise levels measured during the night (from 10:00 p.m. to 7:00 a.m.). In this way, CNEL takes into account the lower tolerance of people for noise during evening and nighttime periods.

Decibel (dB) - A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals. Because they are logarithmic, decibels are not additive. If two similar noise sources produce the same amount of noise (say 100 dB each), the total noise level will be 103 dB, not 200 dB. An increase in noise level of 10 dB is generally perceived as being twice as loud.

Exterior Living Space - Open area designed for outdoor living and/or recreation which has a minimum dimension in any direction of at least 10 feet and excluding required front and side setback requirements.

Maximum Noise Level - The maximum instantaneous noise level that occurs during a specific time interval. In acoustics, the maximum sound pressure level is understood to be for single events unless some other kind of level is specified.

Noise - Annoying, harmful, or unwanted sound.

Noise Barrier - A structure designed to mitigate the impact generated by a noise source (e.g., an arterial or rail line) at an adjacent noise sensitive location. Barriers should be continuous structures (without gaps) and should be constructed of a material that is impervious to noise (e.g., concrete block, stucco-on-wood, wood-on-wood, 1/4" tempered plate glass, earthen berm, or any combination of these materials).

Noise Contour - A line drawn about a noise source indicating constant levels of noise exposure. CNEL is the metric utilized herein to describe community exposure to noise.

Noise Impact Area - A specific area exposed to significant levels of noise.

Noise Reduction - The ability of a material to reduce the noise level from one place to another or between one room and another. Noise reduction is specified in decibels.

Noise-Sensitive Land Uses - Noise-sensitive land uses include, but are not limited to, residences, schools, libraries, hospitals, churches, offices, hotels, motels, and outdoor recreational areas. These typify land uses where suitability is restricted by intrusive noises. Hence, they are termed "noise-sensitive". Noise-sensitivity factors include interference with speech communication, subjective judgement of noise acceptability and relative noisiness, need for freedom from noise intrusion, and sleep interference criteria. The Land Use Element of the General Plan provides a description of the residential areas throughout the City and is considered the source for the inventory of noise-sensitive areas.

Sound - As used herein, sound is a reaction in the ear caused by radiant energy being transmitted from a source by longitudinal pressure waves in air or some other elastic medium.

Sound Level Meter - A measurement instrument containing a microphone, an amplifier, an output meter, and one or more frequency weighting networks. It is used for the determination of sound levels.

GOALS STATEMENT

The goal of the Noise Element is to ensure that the health and well-being of the citizens of Moorpark are not compromised by exposure to excessive and possibly harmful levels of noise. This will serve to provide a quality environment in which the citizens of Moorpark may live and have assurance of continued health and well-being.

The sections that follow provide a discussion of the methods used to measure and analyze the noise environment of the City of Moorpark. The results of the analysis will then be compared with accepted standards to determine where the City is affected by adverse levels of noise. This will lead to a description of a policy and action program designed to minimize (or eliminate) these adverse levels and prevent future problems from occurring.

NOISE EVALUATION AND MEASUREMENT

A description of the character of a particular noise requires the following:

1. The amplitude and amplitude variation of the acoustical wave,

2. The frequency (pitch) content of the noise, and

3. The duration of the noise.

Definitions of the most commonly used terms encountered in community noise assessments and noise control have been provided as part of the Noise Element. Of these terms, the A-weighted sound pressure level (identified as dB{A}) is the scale of measurement which is most useful in community noise measurement. This sound level is measured in decibels to provide a scale with the range and characteristics most consistent with that of peoples' sensitivity to sounds.

The A-weighted sound level, its application to the CNEL measure of noise exposure, and its utility in the description of ambient noise levels are discussed in the remainder of this section.

A-Weighted Sound Level

To establish the A-weighted sound level, the acoustical signal is detected by the microphone and then filtered to weight those portions of the noise which are most annoying to individuals.

This weighting of sound energy corresponds approximately to the relative annoyance experienced by humans from noise at various frequencies. The sound levels of a few typical sources of noise which are routinely experienced by people within the City of Moorpark are listed in Figure 1.

The A-weighted sound level of traffic noise and other long-term noise producing activities within and around a community varies considerably with time. Measures of this varying noise level are accomplished by obtaining statistical samples. For the purposes of this study, the following statistical values have been used:

L_{90} - The near minimum sound level. This value is exceeded 90% of the time during the measurement period.

L_{50} - The central tendency of the sound level. This value is exceeded 50% of the time during the measurement period.

L_{10} - The near maximum sound level. This value is exceeded 10% of the time during the measurement period.

L_{eq} - The energy equivalent sound level. This value is most representative of the long-term annoyance potential as well as other effects of the noise.

These measures may be recorded so as to obtain representative samples of the noise during certain time periods (e.g., peak traffic period, morning, afternoon, night, etc.).

Community Noise Equivalent Level (CNEL)

It is recognized that a given level of noise may be more or less tolerable depending on the duration of exposure and the time of day during which the noise is experienced. There are several measures of noise exposure which consider not only the variation of noise level but also include temporal characteristics. Of these, the State Department of Aeronautics and the California Commission of Housing and Community Development have adopted the CNEL. This measure weights the average noise level for the evening hours (from 7:00 p.m. to 10:00 p.m.) by 5 dB, and the late evening and early morning hours (from 10:00 p.m. to 7:00 a.m.) by 10 dB. The unweighted daytime noise levels are combined with these weighted levels and averaged to obtain a CNEL value. Figure 2 indicates the outdoor CNEL at typical locations throughout the Southern California area.

Acceptable Exterior Noise Exposures - CNEL

Figure 3 indicates the CNEL considered acceptable for various land use categories. In general, exterior noise exposures at residential locations should not exceed a CNEL of 65 dB.

The Environmental Protection Agency (EPA) has recommended a policy stating that a CNEL of 55 dB not be exceeded within exterior living spaces. However, the EPA emphasizes that this level of exposure may not be economically feasible nor, in many cases, a practical level to achieve.

Acceptable Interior Noise Exposures - CNEL

California's noise insulation standards were officially adopted by the California Commission of Housing and Community Development in 1974 and became effective on August 22, 1974 (California Administrative Code, Title 25, Section 1092). The ruling states that "Interior community noise equivalent level (CNEL) with windows closed, attributable to exterior sources shall not exceed an annual CNEL of 45 dB in any habitable room." Additionally, the commission specifies that residential buildings or structures to be located within exterior CNEL contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior CNEL of 45 dB.

Annoyance and Health Considerations

In general, noise may affect the average individual in the following ways:

1. General hearing loss or damage. Sound levels which exceed 85 dB(A), when experienced for long durations during each working day, may result in severe temporary or even permanent hearing loss. State and federal safety and health regulations currently protect workers at levels of exposure which exceed 90 dB(A) for each 8-hour workday.

2. Interference with oral communication. Speech intelligibility is impaired when sound levels exceed 60 dB(A). The amount of interference increases with sound level and distance between speaker and listener.

3. Sleep interference. Sound levels which exceed 40 to 45 dB(A) are generally considered to be excessive for sleeping areas within a residence.

4. Contributes to nervousness and tension. Human response to frequent noises loud enough to startle or alarm has been linked to such chronic stress symptoms as low resistance, high blood pressure, exhaustion, and ulcers.

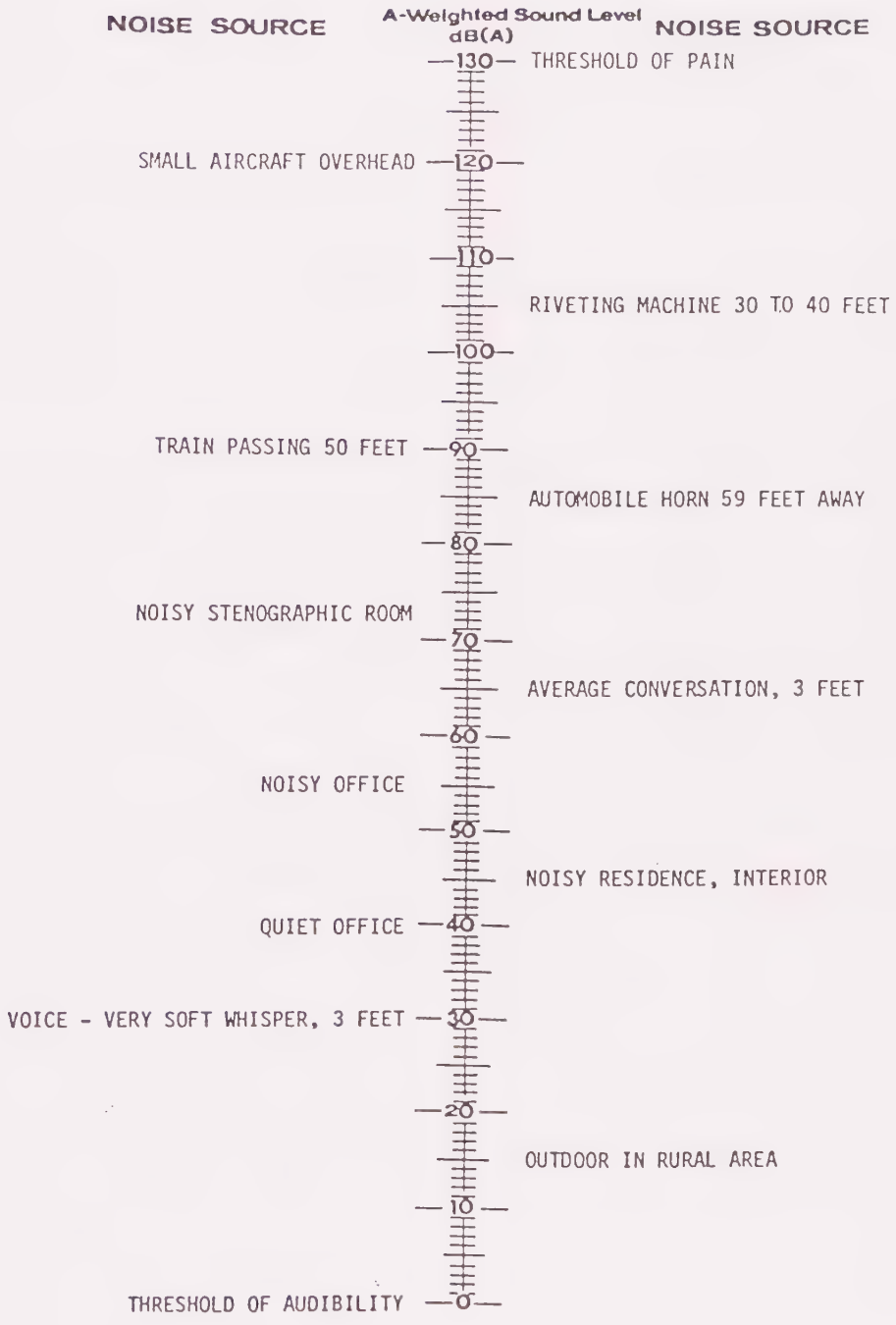
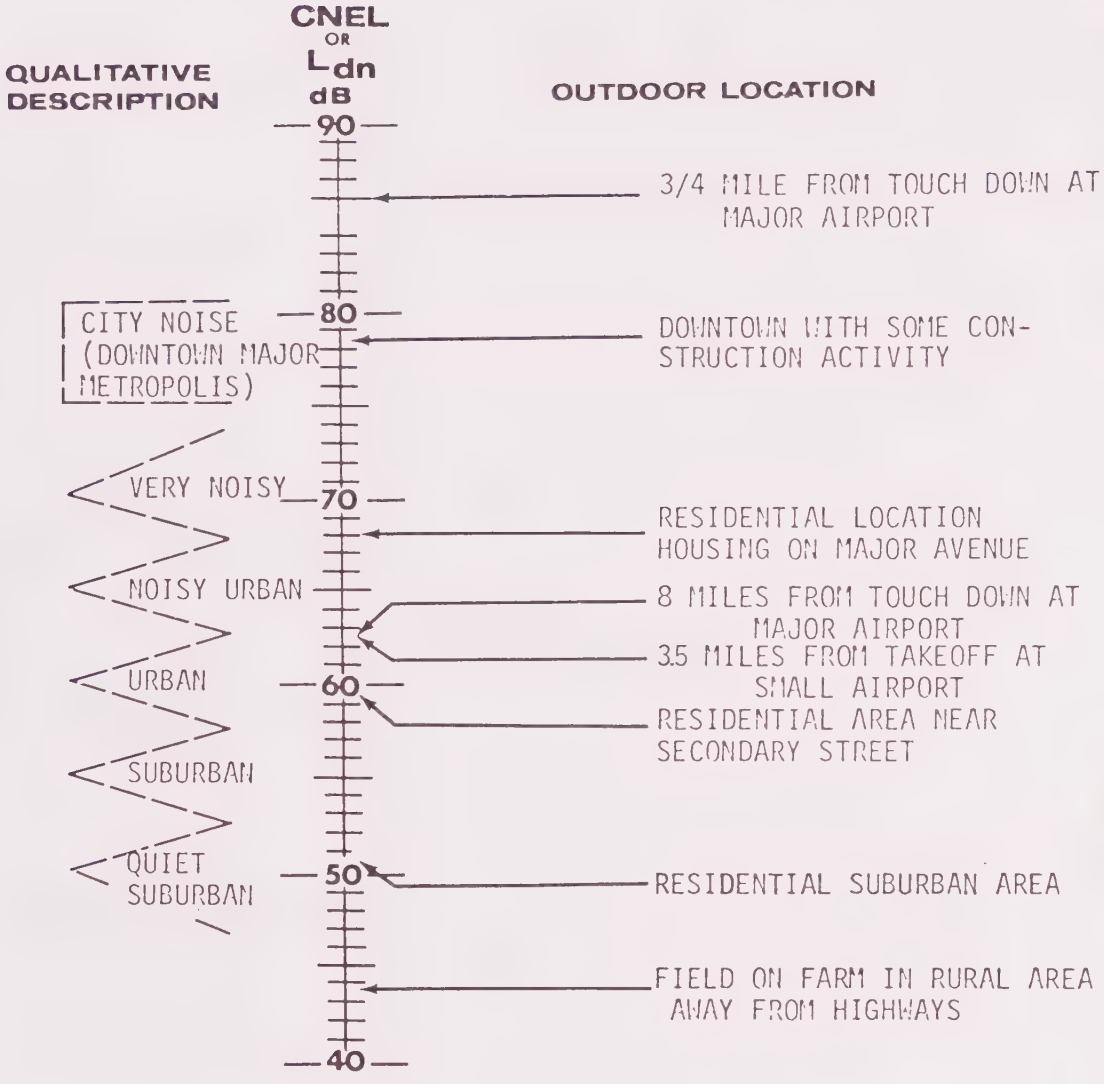
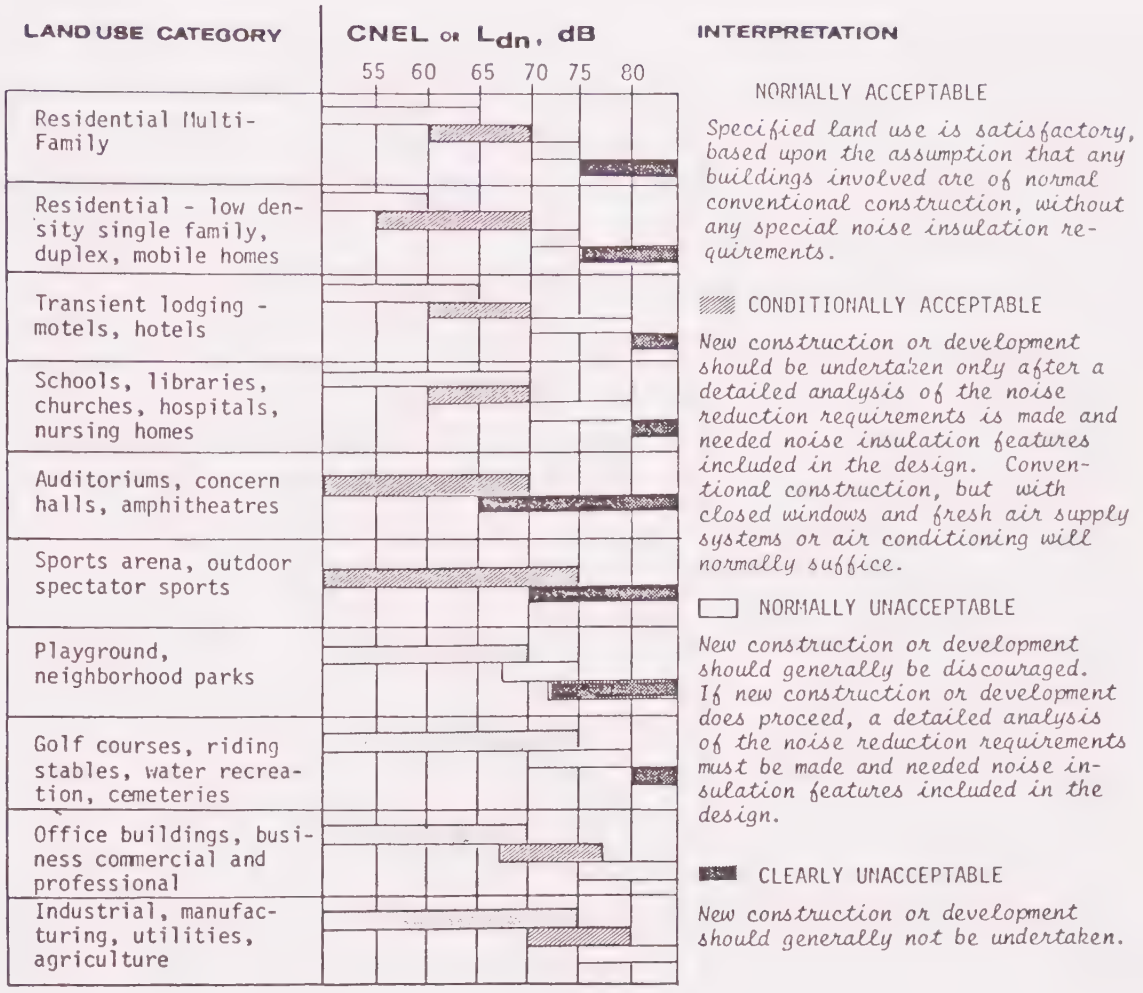


Figure 1. Representative Noise Sources and Sound Levels



SOURCE: In part taken from, "Information on Levels of Environmental Noise...", U.S. Environmental Protection Agency, 550/9-74-004, March 1974.

Figure 2. Outdoor Noise Exposures at Various Locations



SOURCE: In part taken from "Aircraft Noise Impact Planning Guidelines for Local Agencies", U.S. Dept. of Housing and Urban Development, TE/NA-472, November 1972.

Figure 3. Land Use Compatibility for Community Noise Environments

FINDINGS

The most significant noise producing activity within the City of Moorpark involves the transportation elements (arterials, highways, and rail lines). In addition, numerous fixed sources of noise exist within portions of the City. The following section provides a discussion of the noise measurements obtained and an inventory of noise sources within the City. From these measurements and complimenting analytical procedures, noise exposure contours have been derived for the City and noise impact areas have been identified.

Noise Survey Results

Various locations within the City of Moorpark were surveyed in March 1986 to establish the existing levels of noise. These measurement sites were selected to determine the impact on noise sensitive areas due to traffic on major arterials (including Route 118) and operations on the Southern Pacific railroad line. A total of twenty measurements were obtained, four of which were 24-hour samples. The measurement locations and the sound levels measured at each position are listed in Appendix IV and provide a definition of the overall noise environment of the City of Moorpark.

The following provides an inventory of noise sources measured within Moorpark and the ranges of maximum sound levels generated by these sources:

Noise Source	Range of Sound Levels
Passenger Aircraft Flyover (Altitude 1000')	64 to 76 dB(A)
Light Aircraft Flyover (Alt. 1000')	52 to 62 dB(A)
Truck Leaving Plant on Private Property at 50'	72 to 80 dB(A)
Trash Pickup at 100'	75 to 95 dB(A)
Helicopter Flyover (Alt. 200')	85 to 95 dB(A)
Truck on City Streets at 50'	75 to 90 dB(A)
Motorcycles at 50'	65 to 90 dB(A)
Sports Cars at 50'	65 to 85 dB(A)
Traffic on Main Arterials at 50'	65 to 75 dB(A)
Traffic on Highway at 50'	80 to 85 dB(A)
Construction Noise at 50'	Refer to Figure 4
Train Horn Sound, Level vs. Distance	Refer to Figure 5
Locomotive Passby at 50'	84 to 86 dB(A)

When the sound level of a noise is indicated, the distance from source to receiver must be stated.

These noise sources were measured at various locations throughout the City. Therefore, the sound levels are not necessarily indicative of any particular area or location.

Community Noise Equivalent Level (CNEL) Contours

CNEL contours have been derived for each of the noise producing transportation elements within Moorpark. The previously cited noise measurements and generally recognized analytical procedures have been used in the preparation of the CNEL contour maps (Figures 6 and 7). The CNEL contours have been prepared on City street maps using a scale of 1"=500'. The procedures used to derive these contours essentially rely on research studies reported by the Federal Highway Administration (Reference 6).

Contours are provided for CNEL values from 60 dB to 70 dB in 5 dB increments for the existing (Figure 6) and projected (Figure 7) environments within the City.

A significant portion of the noise experienced in the City is produced by traffic on the primary and secondary arterials. Each of the arterials within the City has been considered in the development of the CNEL contours. Also considered in the development of the contours were operations on the Southern Pacific rail line.

Highway Traffic Noise

CNEL values at some residential locations bordering the Route 118 and Route 23 highways as well as Los Angeles Avenue (Route 118) and Moorpark Avenue (Route 23) are projected to be in the range of 65 to 75 dB. This range of levels is greater than is considered acceptable and will compromise the welfare of residents exposed for a long period of time. (Refer to Appendix III for a discussion of the effects of noise on people.)

Traffic Noise from Major and Secondary Arterials

The CNEL values at the residential locations directly adjacent to the following arterials exceeds 65 dB due to traffic noise. (Refer to Table III-1.) Hence, the noise exposures at these residential locations, if any, are considered excessive:

Arterial	Reach
Campus Park Drive	Collins to E. of College View
High Street	Moorpark Road to Moorpark Avenue
Moorpark Avenue	N. of Los Angeles Avenue
Moorpark Road	N. City Limits to S. City Limits
Mountain Trail Street	S. of Tierra Rejada (projected)
New Los Angeles Avenue	E. of Moorpark Road
Tierra Rejada	Los Angeles to Route 23

Noise From Train Movements On The Southern Pacific Rail Line

The following operational profile has been assumed for this rail line based on the results of a twenty-four hour measurement obtained in the City of Camarillo as part of a previous study:

Time of Day	Train Movements
7:00 am - 7:00 pm	8
7:00 pm - 10:00 pm	2
10:00 pm - 7:00 am	6
Totals:	16

This level of activity is estimated to generate a CNEL of 74 dB at a distance of 50' from the tracks. The impact at existing residential locations adjacent to the tracks is considered to be significant.

It is not known whether the level of rail activity cited above will increase significantly in the future. However, any future impact will be directly related not only to the number of operations occurring each day, but also to the time of day at which

they occur. A significant increase in evening and nighttime operations will have a detrimental effect on the quality of life in Moorpark. The late night and early morning train passes are the primary annoyance to residents who live in proximity to the tracks.

Commercial/Industrial Noise

In general, commercial/industrial noise within the City of Moorpark is not considered excessive. However, where residential locations are adjacent to heavy industrial zones or trucking operations, a significant impact exists. This impact is primarily related to noise generated by loading dock operations, trucks entering and leaving the area, and mechanical equipment located both inside and outside the building(s).

Construction Activity

The impact of construction activity noise which occurs during the daytime is considered minimal for no more than two or three months of activity. However, late night and weekend disturbance caused by construction noise may cause a significant impact when experienced at nearby residential locations. Figure 4 provides a summary of typical noise levels generated by construction equipment.

Noise Sensitive Locations

In general, the sound levels of noise sensitive locations within the City are not considered excessive. However, the following areas are located within a 65 dB CNEL contour as identified on the maps of Figures 6 and 7:

Chaparral Middle School
Flory School
Moorpark Community School (Continuation High School)
Moorpark Union Elementary School
Proposed elementary school adjacent to Tierra Rejada
Proposed high school adjacent to Tierra Rejada
Moorpark Library
Campus Park
Paul Griffin Park

Table 1 provides an assessment of impact at each school relative to the State standard regarding classroom noise levels (Section 216 of the State of California Streets and Highways Code). This standard states that interior sound levels for school rooms adjacent to a freeway or State highway may not exceed an equivalent sound level (Leq) of 52 dB(A). It is also generally applied to other sources of noise which may intrude on schoolroom spaces such as busy arterials, rail lines, etc.

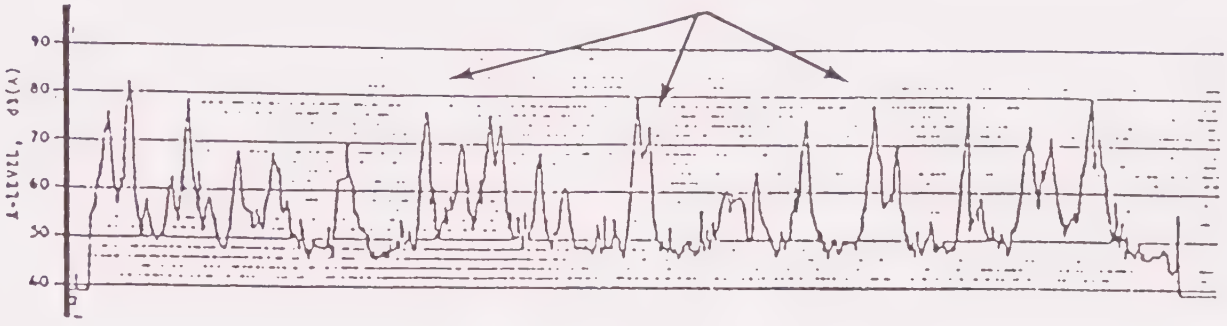
Table 1. Assessment of Impact at Schools Within the City of Moorpark Relative to State Standards

School	Assessment of Impact* Windows Open	Windows Closed
Chaparral Middle School	Insignificant	Insignificant
Flory School	Insignificant	Insignificant
Moorpark Community College (Continuation High School)	Insignificant	Insignificant
Moorpark Community School	Significant	Significant
Moorpark Memorial High School	Insignificant	Insignificant
Moorpark Union Elementary School	May be significant near Los Angeles Ave.	Insignificant
Peach Hill School	Insignificant	Insignific

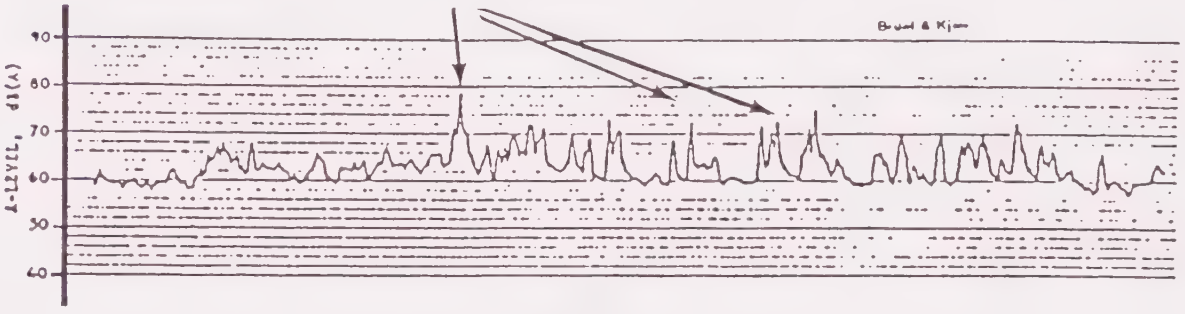
* Assumes 10 dB(A) of noise reduction for standard construction with windows open and 15 dB(A) of noise reduction with windows closed.

CONSTRUCTION EQUIPMENT

Truck and Front Loader at Construction Site



Trucks (6-axle) on Highway Leaving Construction Site



CONSTRUCTION EQUIPMENT NOISE LEVELS
(measured at a distance of 50 feet)

Equipment	Noise Level	Equipment	Noise Level
Earthmoving		Stationary	
front loader	79 dB(A)	pump	76 dB(A)
backhoe	85	generator	76
bulldozer	80	compressor	81
tractor	80	Impact	
scraper	88	pile driver	101
grader	85	jack hammer	88
truck	91	rock drill	98
paver	89	pneumatic tools	86
Materials Handling		Other	
concrete mixer	85	saw	78
concrete pump	82	vibrator	76
crane	83		
derrick	88		

Figure 4. Construction Equipment Noise Levels

TRAIN AND HORN SOUNDING LEVELS

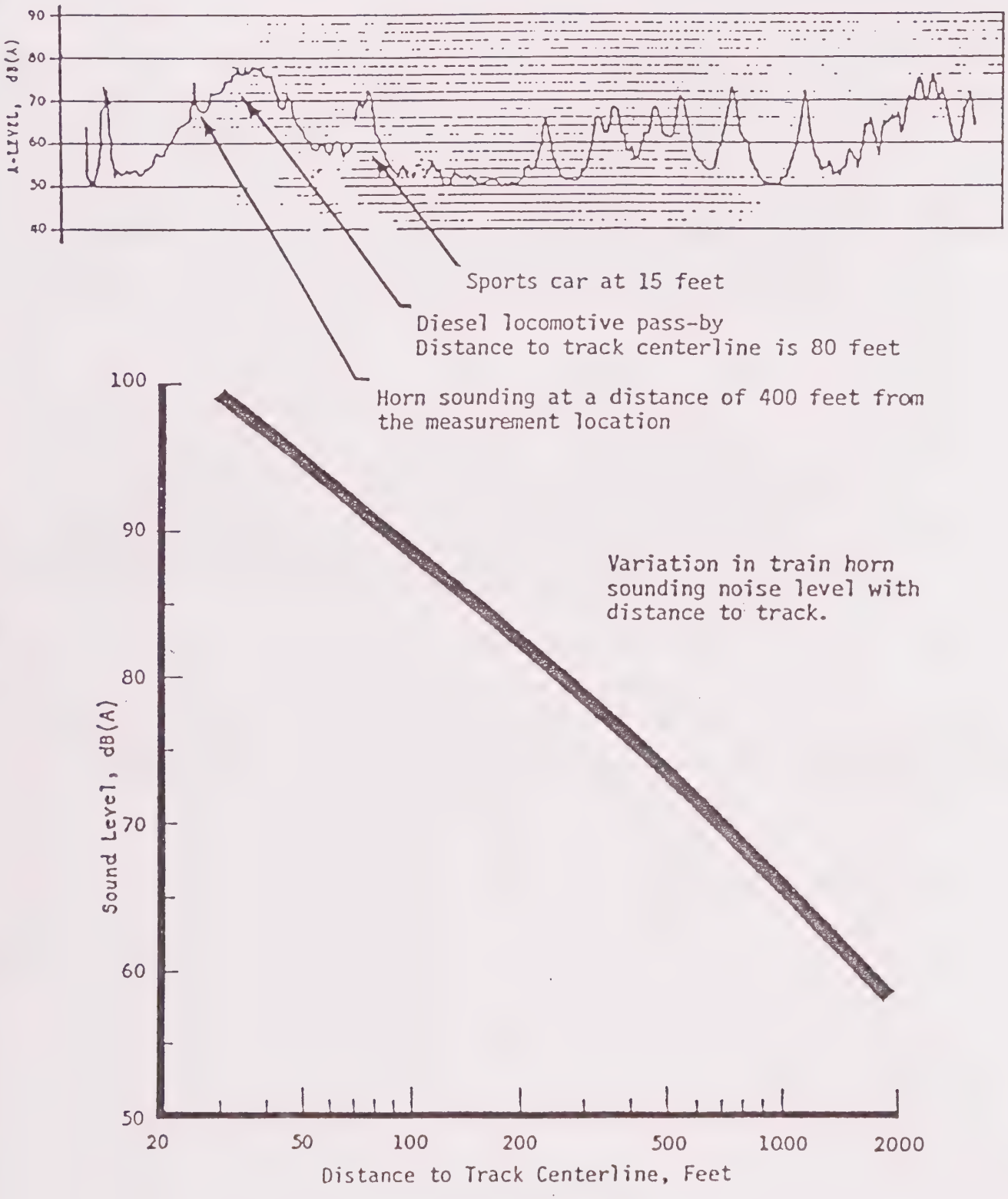


Figure 5. Train and Horn Sounding Noise Levels

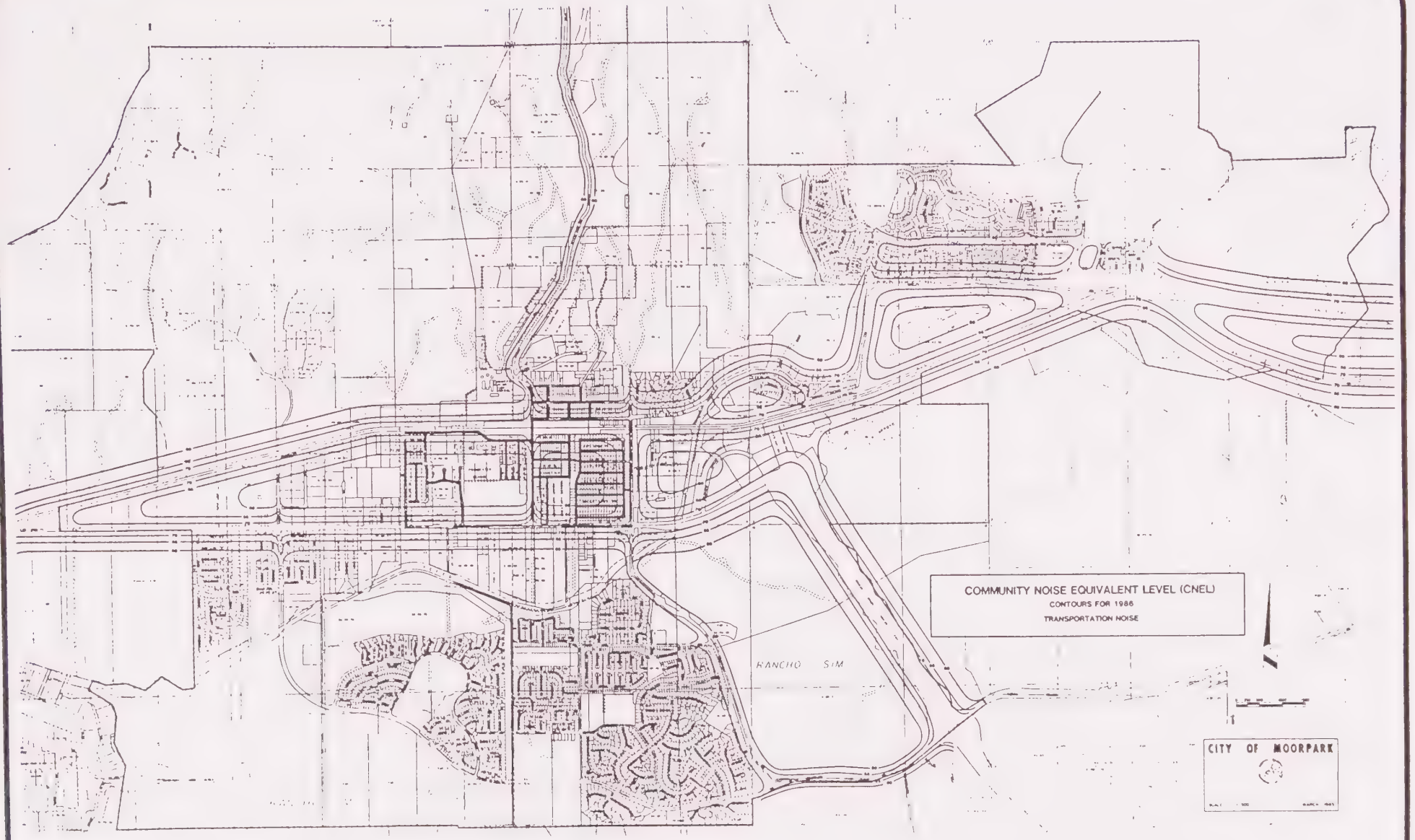


Figure 6. Community Noise Equivalent Level (CNEL) Contours for the Existing (1986) Transportation Activity.

NOTE: Refer to 500 scale maps at the Planning Department

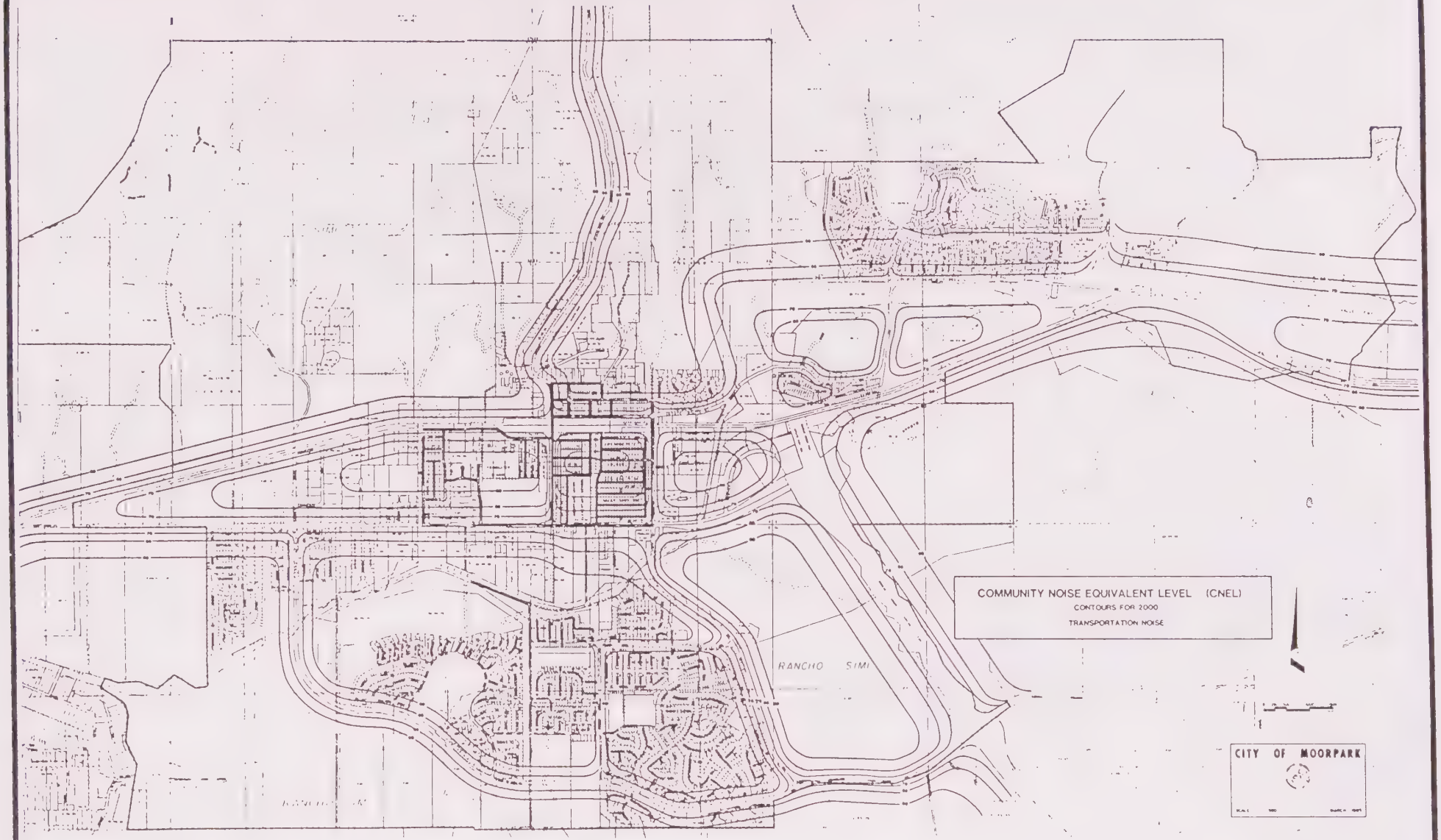


Figure 7. Community Noise Equivalent Level (CNEL) Contours for the Projected (Year 2000) Transportation Activity.

NOTE: Refer to 500 scale maps at the Planning Department

PROBLEM SUMMARY

In the City of Moorpark there are four major sources of noise:

1. Traffic on Routes 118 and 23
2. Traffic on the major arterials within the City
3. Rail traffic on the Southern Pacific rail line, and
4. Commercial/industrial activities adjacent to residential locations.

Of these, the most serious problems are the noise levels produced by operations on the State highways and by traffic on the major and secondary arterials. A CNEL of 70 to 80 dB exists at some residential locations as a result of these sources. This compromises the welfare of citizens in these areas and should be corrected.

The Noise Element has identified a number of noise related problems and issues within the City. The Policy Program consists of policies and implementation techniques which minimize these problems and issues. Short-term possibilities for noise reduction in Moorpark consist mostly of the enforcement of noise control guidelines and the appropriate placement of walls and berms to buffer residential and other noise-sensitive areas from traffic noise. Long-term possibilities for noise reduction will be contingent upon future development, especially along major traffic routes, and in the vicinity of the railroads. Planning now can help to minimize the future impact of noise on the community.

POLICY PROGRAM

POLICY 1

NOISE BARRIERS OR OTHER NOISE MITIGATION TECHNIQUES SHOULD BE REQUIRED IN NEW SUBDIVISIONS IF DEVELOPED ALONG STATE HIGHWAYS, CITY STREETS, OR RAILROADS WHERE A SIGNIFICANT IMPACT EXISTS OR IS PROJECTED AT NEARBY NOISE-SENSITIVE LOCATIONS.

Action

The City should review proposed subdivision tracts, parcel maps and site plans involving residential development with respect to noise impacts and require noise barriers or alternative sound attenuation to reduce the interior and exterior CNEL to 45 dB and 65 dB, respectively. (Refer to Policy 4 for a discussion of interior and exterior noise exposure standards.)

Implementation

The City shall adopt uniform standards for planning and new construction for new residential developments within the noise impact areas adjacent to projected transportation corridors in the City. Such transportation corridors include railroad right-of-ways and state highways. An example of such conditions of approval are contained in Annex 1 to this document. Such standards should be adopted prior to January 1, 1987.

Discussion

Actual noise barriers may be required on State, City, or railroad rights-of-way at heights from 8 to 12 feet in order to reduce noise to acceptable levels. Other methods to reduce noise impacts to future residents may be substituted, such as increased setbacks, site, layout, and building design.

Responsibility

Community Development Department, CalTrans, and the Southern Pacific Transportation Company.

POLICY 2

NOISE BARRIER CONSTRUCTION ALONG STATE HIGHWAYS SHOULD BE PURSUED WHERE A SIGNIFICANT IMPACT EXISTS OR IS PROJECTED AT NEARBY RESIDENTIAL ZONES AND OTHER NOISE SENSITIVE LOCATIONS.

Action

The City should actively encourage the State of California to finance the construction of noise barriers or develop other noise mitigation strategies to reduce noise impacts on adversely impacted areas.

Implementation

The City Council should utilize all appropriate political or administrative actions in order to secure funding from the State of California and/or the Department of Transportation for the State of California to construct barriers to obstruct or dissipate sound emissions, or to develop other noise mitigation strategies, to reduce noise impacts on noise-sensitive areas adjacent to state highways.

Discussion

Residential locations directly adjacent to the highways are exposed to a CNEL in the range of 65 to 80 dB. Noise barrier heights from 10 to 12 feet are needed at these locations to reduce the noise to acceptable levels. Such construction requires the approval, cooperation, and financing by the State of California.

Responsibility

Community Development Department liaison with City Council requests to the State of California.

POLICY 3

NOISE BARRIERS SHOULD BE CONSTRUCTED ALONG THE SOUTHERN PACIFIC RAIL LINE CORRIDOR WHERE RESIDENCES EXIST ADJACENT TO THE MAIN TRACKS.

Action

Where funding is available, the City should consider constructing noise barriers in residential areas where existing homes are directly adjacent to the main tracks.

Implementation

The City should encourage railroad companies to implement policies to reduce noise produced by trains and switching movements, especially near residential areas and during the night. The City Council should utilize appropriate political or administrative actions to secure railroad companies' participation in the construction of barriers to obstruct or dissipate sound emissions to reduce noise impacts on noise-sensitive locations adjacent to railroad right-of-ways. In conjunction with the preparation of the downtown plan or any future general plan update or applicable specific plan the City should investigate and consider appropriate funding alternatives, including, but not limited to, the formation of a redevelopment agency or the formation of assessment districts to secure the construction of the necessary noise barriers.

Discussion

Residential locations adjacent to rail lines are exposed to noise in the range of 90 to 110 dB(A) during train pass-bys. The construction noise barriers with heights of 13 to 15 feet should be considered as a noise reduction measure. Construction of a sound barrier must be as close as possible to the track in order to be effective and economically feasible. This requires the

actual construction of the barrier on the rail line right-of-way which is under the management of the Southern Pacific Transportation Company. Such construction requires the approval of, cooperation of, and coordination with this railway company.

Responsibility

City of Moorpark

POLICY 4

THE CITY SHOULD CONSIDER PLANNING GUIDELINES WHICH INCLUDE NOISE CONTROL FOR ALL NEW RESIDENTIAL DEVELOPMENTS AND CONDOMINIUM CONVERSION PROJECTS.

Action

The City should adopt guidelines which consider noise as an early factor in planning future residential developments. In addition, the City should require that the State's Noise Insulation Standards be applied to all new single family and condominium conversion projects.

Implementation

The City shall adopt uniform conditions of approval for new residential developments which are in the noise impact area of commercial and industrial operations as well as existing transportation sources. These standards should be adopted prior to January 1, 1987.

Discussion

Portions of the City are significantly affected by noise, as shown in the noise contour maps of Figures 6 and 7. An acoustical analysis should be required for all new residential and condominium conversion projects within the 60 dB CNEL contour of the highways, arterials, and rail lines within the City. This analysis should indicate the existing and projected CNELs on the site and the method(s) by which the noise is to be controlled or

reduced to no more than 65 dB within the exterior living space, and no more than 45 dB within the interior living space of the project. This latter standard requires that the City extend the application of the State's Noise Insulation Standards to all new single family and condominium conversion projects. Currently, they only apply to all new multifamily units (apartments, motels, etc.).

Noise should be considered early in the development of new residential or noise-sensitive construction. The location and orientation of the residential buildings may be configured to minimize or eliminate a noise problem for a site adjacent to the freeway, arterials, or rail lines. Other effective noise reduction tools include the use of earthen berms, sound reducing walls, and generous setbacks.

Interior CNEL levels may be reduced to 45 dB or less in any of the following ways:

1. A reduction of the exterior noise to which the dwelling is exposed,

2. Installing sound rated windows suitable for the noise reduction required,

3. Configuring and insulating exterior walls and roofing systems to reduce the interior noise to acceptable levels,

4. Locating (or eliminating) vents, mail slots, etc., to minimize sound propagation into the home, and

5. Installing forced air ventilation as needed to provide a habitable living space if the interior CNEL is to be met with all or some windows closed.

Responsibility

Community Development Department

POLICY 5

FUTURE PROJECTS WITHIN THE CITY SHOULD REFLECT A CONSCIOUSNESS ON THE PART OF THE CITY REGARDING THE REDUCTION OF UNNECESSARY NOISE NEAR EXISTING NOISE-SENSITIVE AREAS SUCH AS RESIDENCES, PARKS, HOSPITALS, LIBRARIES, CONVALESCENT HOMES, ETC.

Action

1. Maintain liaison with transportation agencies such as CalTrans regarding the reduction of noise from existing facilities. The design and location of new facilities should also be considered.

2. Consideration should be given to buffering noise-sensitive areas from noise generating land uses.

3. Noise monitoring within the City should be an ongoing process conducted by the appropriate departments. Additionally, a liaison should be developed between the City and the Ventura County Health Department in order to obtain assistance in on-site measurements of noise levels.

4. Close attention should be paid to the noise evaluation in environmental impact statements.

Implementation

The City shall adopt standards for planning and new construction that conform to existing noise impact levels. Such standards should be adopted by the City prior to January 1, 1986. The City should also adopt a maximum permitted noise level which is within the limits that will protect public health and which will consider land use relationship in the specific geographical situation. Such maximum noise levels should be established prior to July 1, 1987. In this regard, the City shall:

- Establish acceptable noise standards consistent with health and quality of life goals and employ effective techniques and noise abatement through such means as building codes, subdivision, and zoning ordinances.

- Develop noise reduction strategies and priorities to reduce noise where noise impacted areas exist.

- Encourage the use of quieter automobiles, machinery, and equipment.

- Develop criteria for location of certain noise-sensitive land uses and facilities such as schools, hospitals, etc. These facilities should be adequately designed and insulated to protect occupants from unusually loud exterior noise.

- Include consideration of the noise environment as a part of all land use planning.

- Regulate or abate unnecessary outdoor noise.

Discussion

To reduce the level of noise in noise-sensitive areas, the Circulation Element of the General Plan should indicate the location of major streets so as to divert through traffic away from these areas.

As the existing and projected noise contours developed for the Noise Element indicate, traffic is a major source of noise in the City. However, these contours should not be considered adequate for site specific evaluations. Site specific reports with satisfactory noise assessments have the additional value of helping to monitor localized noise conditions. These concerns should include:

1. Annoyance - Excessive noise is socially disruptive and may be physically damaging.

2. Economics - Excessive noise adversely affects property values and levels of productivity. In the past, the costs of excessive noise from transportation facilities have been passed on to those in the vicinity rather than be borne by the producer of the noise.

Responsibility

Community Development Department

POLICY 6

THE CITY SHOULD DEVELOP A POLICY FOR NOISE ABATEMENT AND CONTROL OF RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL ACTIVITIES WITHIN THE CITY SUCH THAT INTRUSIVE NOISE IS LIMITED TO ACCEPTABLE STANDARDS.

Action

The City should consider the adoption of an appropriate ordinance which will place a limit on the level of noise produced by residential, commercial, and industrial activities that may intrude on adjacent properties.

Implementation

The City should adopt a comprehensive noise ordinance which regulates noise in the City and provides for the abatement of excessive noise.

Discussion

Noise emanating from residential, commercial, and industrial uses is regulated by the City's Municipal Code. However, acceptable dB(A) ranges have not been designated for these uses.

Responsibility

Community Development Department

POLICY 7

THE CITY SHOULD ENCOURAGE THE REDUCTION OF NOISE THROUGHOUT MOORPARK

Action

1. The City should encourage the Southern Pacific Transportation Company to reduce the level of noise produced by train movements within the City. This can be accomplished by regular maintenance of the track and trains. Use of the trains' horns should also be minimized. The City should also monitor the existing operations on the rail lines as well as any plans for future development. Any actions that increase the level of noise throughout the City should be discouraged.

2. The City should consider noise control requirements for all new equipment purchases.

3. The City should implement a review process concerning its policies and regulations affecting noise every five years or as new technological developments warrant, per State guideline requirements.

4. The City should encourage the enforcement of regulations (such as the State Vehicle Code noise standards) for all privately owned, City owned, and City operated automobiles, trucks, and motorcycles operating within Moorpark.

Responsibility

Community Development Department, City of Moorpark Police Department.

APPENDICES

I. References

II. Effects of Noise on People

III. Traffic Analysis and Community Noise Equivalent Level, (CNEL) Data for Major and Secondary Arterials

IV. Noise Measurement Sites and Analysis of the Data

APPENDIX I

References

References

1. T. J. Schultz, "Noise Assessment Guidelines - Technical Background", U.S. Department of Housing and Urban Development, Report No. TE/TN 172, 1971.

2. "A Study of the Magnitude of Transportation Noise Generation and Potential Abatement", U.S. Department of Transportation (a set of seven reports), 1970.

3. "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances", U.S. Environmental Protection Agency, Report P.B. 206 717 (National Technical Information Service No. NTIS 300.1), 1971.

4. "Industrial Noise Manual", American Industrial Hygiene Association (14125 Prevost Street, Detroit, Michigan 48227), 1966.

5. "Noise Control in Multifamily Dwellings", U.S. Department of Housing and Urban Development (supercedes FHA No. 750), 1963.

6. "Highway Noise", U.S. Department of Transportation, Federal Highway Administration, FHWA-RD-77-108, FHWA Highway Traffic Noise Prediction Model, December 1976.

7. "Aircraft Noise Impact Planning Guidelines for Local Agencies", U.S. Department of Housing and Urban Development, TE/NA 472, November 1972.

8. "Information on Levels of Equipment Noise Requisite to Protect Public Health and Welfare within an Adequate Margin of Safety", U.S. Environmental Protection Agency, March 1974.

9. 1980 and 1986 CNEL Noise Contour Maps for Meadows Field Airport, prepared by Wilbur Smith and Associates, Inc.

10. "Noise Impact Study for an Amended Conditional Use Permit, Rio Bravo Airport, Bakersfield, California", Brown-Buntin Associates, December 1982.

APPENDIX II

Effects of Noise on People

APPENDIX II

Effects of Noise on People

Whether a sound is a noise or not will depend on the source of the sound, the loudness relative to the background noise, the time of day, the situation, and the listener. The difference in our reactions is explained by the perceived noisiness, or how undesirable the sound is. An unwanted sound may be extremely irritating though it is not unreasonably loud. Recent studies have documented more serious effects of noise than annoyance; among them are slow, permanent hearing loss and physical and psychological stress.

While permanent deafness is sometimes caused by a single, very loud noise, most noise-induced hearing loss research has been done in the field of industrial noise and "hard rock" music where there is a widespread, periodic exposure to high levels of sound. Two main findings have come out of these studies. First, though the human ear registers a hearing loss after a few hours of exposure to loud noise, its flexibility is such that normal hearing may be completely regained after several hours of rest. Second, constant noise with no rest or frequent exposure to high noise levels over a period of several years will destroy the ability of the ear to recover its normal hearing. What this means is that infrequent exposure to loud noises can actually be less harmful than continuous exposure to a lower, constant noise level. Furthermore, the damage caused by, say, exposure to loud industrial noise during an 8-hour day will be covered by the Federal Workers' Compensation Act, while that caused by exposure to freeway noise over a 24-hour day receives no compensation at all.

Noise is also a contributing factor in medical stress. While the ability to respond quickly to messages can be beneficial to self-preservation, unnecessary arousal by irrelevant noises can interfere with efficiency, train of thought, and peace of mind. Human responses to frequent noises loud enough to startle or alarm have been linked to such chronic stress symptoms as low resistance, high blood pressure, exhaustion, and ulcers.

Speech interference has been a criterion for a great deal of noise research. Background noise interference naturally contributes to the misunderstanding of spoken communications when one word or more out of a sentence is masked by noise. It can reduce learning in the classroom and job efficiency at the office by forcing voices to be raised. Social psychologists say it may be a large factor in interpersonal friction or arguments. A high degree of speech interference may be accompanied by social disruption and a downgrading of the quality of life.

A consequence of even relatively low noise levels is sleep interference -- people being awakened or kept awake by noise. A high percentage of community complaints against noise generators stem from sleep interference. Steady, droning noise tends to be less disturbing than fluctuating noise levels. Sleep studies have linked interrupted rest to personality change and physiological deterioration.

As a matter of public health as much as community preference, noise pollution must be controlled. The latest findings of physical and emotional effects have mobilized many state and county health departments to strongly recommend a clampdown on

noise levels. The areas most vulnerable to the harmful effects of sound seem to be residential communities, particularly at night, but all human activities can be adversely affected by noise.

The effect of noise on real estate values has not been as systematically explored as has been the effect of noise on humans. Federal findings indicate that high noise levels will bring down the economic quality and value of homes, stores, and offices. This conclusion has led to the U.S. Department of Housing and Urban Development's (HUD) directive to withhold funding from projects that do not comply with acceptable noise standards. HUD's concern is divided between adverse effects on humans and economic losses. HUD, therefore, encourages the control of noise sources as well as the control of land use patterns for housing and other municipal needs, thus separating uncontrollable noise sources from residential and other noise-sensitive areas.

APPENDIX III

Traffic Analysis and Community Noise Equivalent Level (CNEL) Data for Major and Secondary Arterials

APPENDIX III

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Methodology for Estimating Location of CNEL Contour Lines

Noise produced by traffic on major and secondary arterials may be estimated by use of recognized procedures described in reports available from the Highway Research Board. (References 1,2,3.) These procedures consider the following parameters:

1. Average volume of traffic.
2. Speed of traffic.
3. Number of traffic lanes.
4. Distance from traffic lane to receiver.
5. Mix of traffic (autos and trucks).
6. Elevation of the arterial relative to the receiver.
7. Gradient of the arterial (up or down hill).

Reasonably conservative estimates of the community noise equivalent level (CNEL) for arterial highway traffic situation are provided in Figure III-1. These estimates are for receiver locations at the same grade as the arterial with little or no gradient. It should also be noted that these estimates are for a 4% truck mix. An analysis using the Federal Highway Administration's Highway Noise Reduction Model (4) indicates that various truck mixes as follows:

Truck Mix	Change in CNEL
3.5%	+0 dB
5%	+0.5
7%	+1.5
16%	+4.0
25%	+6.0

Figure III-2 indicates the approximate corrections for arterials that are elevated or depressed relative to the receiver as well as the variation in CNEL with distance.

References

1. "Highway Noise, Measurement, Simulation, and Mixed Reactions", Highway Research Board, Report 78 (1969).

2. "Highway Noise, A Design Guide for Highway Engineers", Highway Research Board, Report 117 (1971).

3. "Highway Noise, A Field Evaluation of Traffic Noise Reduction Measurements", Highway Research Board, Report 144 (1973).

4. "FHWA Highway Traffic Noise Prediction Model", FHWA-RD-77-108, December 1978.

Table III-1. Distances to Existing and Projected CNEL Contour Lines, Moorpark

	ARTERIAL TYPE*	GRADE	TRUCK MIX	AVE. DAILY TRAFFIC 1986	AVE. DAILY TRAFFIC 2000	CNEL @ 50' 1986	CNEL @ 50' 2000	DISTANCE TO CONTOURS, 1986 60dB	65dB	70dB	75dB	80dB	DISTANCE TO CONTOURS, 2000 60dB	65dB	70dB	75dB	80dB
CAMPUS PARK DRIVE																	
Princeton to Collins	5	AT	4.0%	2,600	6,400	60.5	64.5	56	---	---	---	---	120	---	---	---	---
Collins to College View	5	AT	4.0%	3,800	12,600	62.0	67.5	75	---	---	---	---	200	83	---	---	---
East of College View	5	AT	4.0%	8,500	7,800	66.0	65.5	155	62	---	---	---	143	56	---	---	---
HIGH STREET																	
Moorpark Rd. to Moorpark Av.	1	AT	8.0%	7,000	7,700	64.5	65.0	120	---	---	---	---	130	50	---	---	---
LOS ANGELES AVENUE																	
West of Moorpark Avenue	3	AT	19.4%	10,600	23,000	72.5	76.0	428	200	83	---	---	680	340	155	62	---
Moorpark Av. to Moorpark Rd.	6	AT	19.4%	14,000	48,000	72.5	78.0	428	200	83	---	---	860	460	215	90	---
Moorpark Rd. to Princeton	2	AT	12.0%	21,000	17,000	73.5	72.5	490	235	100	---	---	428	200	83	---	---
Princeton to College View	2	AT	12.0%	19,000	17,000	73.0	72.5	460	215	90	---	---	428	200	83	---	---
East of College View	3	AT	8.0%	3,100	5,000	64.5	67.0	120	---	---	---	---	185	75	---	---	---
MOORPARK AVENUE																	
North of Los Angeles Avenue	1	AT	12.0%	6,400	16,000	65.0	69.0	130	50	---	---	---	255	110	---	---	---
MOORPARK ROAD																	
North of New Los Angeles Av.	6	AT	18.4%	16,800	15,000	73.5	73.0	490	235	100	---	---	460	215	90	---	---
South of New Los Angeles Av.	2	AT	4.0%	5,100	24,800	64.5	71.5	120	---	---	---	---	368	170	69	---	---
MOUNTAIN TRAIL STREET																	
South of Tierra Rejada	1	AT	4.0%	0	15,800	0.0	66.5	---	---	---	---	---	170	69	---	---	---
NEW LOS ANGELES AVENUE																	
East of Moorpark Road	6	AT	18.4%	17,000	48,000	73.5	78.0	490	235	100	---	---	860	460	215	90	---
PEACH HILL ROAD																	
T. Rejada to C. Barrett	1	AT	4.0%	0	8,600	0.0	64.0	---	---	---	---	---	110	---	---	---	---
C. Barrett to Moorpark Road	1	AT	4.0%	0	5,800	0.0	62.5	---	---	---	---	---	83	---	---	---	---
PRINCETON AVENUE																	
Los Angeles to Campus Park	1	AT	4.0%	3,500	6,500	61.0	62.5	62	---	---	---	---	83	---	---	---	---

Table III-1. continued

	ARTERIAL TYPE*	GRADE	TRUCK MIX	AVE. DAILY TRAFFIC 1986	AVE. DAILY TRAFFIC 2000	CNEL @ 50' 1986	CNEL @ 50' 2000	DISTANCE TO CONTOURS, 1986 60dB	65dB	70dB	75dB	80dB	DISTANCE TO CONTOURS, 2000 60dB	65dB	70dB	75dB	80dB
TIERRA REJADA ROAD																	
Los Angeles to Arroyo Simi	3	AT	4.0%	0	16,500	0.0	70.5	---	---	---	---	---	320	143	56	---	---
Arroyo Simi to Peach Hill	3	AT	4.0%	0	20,400	0.0	71.5	---	---	---	---	---	368	170	69	---	---
Peach Hill to Moorpark Road	3	AT	4.0%	0	19,000	0.0	71.0	---	---	---	---	---	340	155	62	---	---
Moorpark Rd. to Route 23	3	AT	4.0%	7,100	37,600	66.5	73.0	170	69	---	---	---	460	215	90	---	---
ROUTE 23																	
South of New Los Angeles Av.	7	ABOVE	18.4%	12,000	61,000	72.5	80.0	430	---	---	---	---	1050	600	265	---	---
North of New Los Angeles Av.	7	ABOVE	8.0%	0	67,000	0.0	78.0	---	---	---	---	---	860	460	---	---	---
North of High Street	3	AT	10.5%	6,000	12,000	65.0	69.0	130	50	---	---	---	255	110	---	---	---
ROUTE 118 FREEWAY																	
East of College View	7	ABOVE	18.4%	19,000	65,000	74.5	80.5	560	230	---	---	---	1100	640	298	---	---

*ARTERIAL TYPES: 1. Two Lane Highway, 35 mph
2. Two Lane Highway, 40 mph
3. Two Lane Highway, 45 mph
4. Four Lane Highway, 35 mph
5. Four Lane Highway, 40 mph
6. Four Lane Highway, 45 mph
7. Six Lane Highway, 50-65 mph
8. Eight Lane Freeway, 50-65 mph

NOTE: 'AT', 'ABOVE', and 'BELOW' refer to the grade of the arterial relative to the surrounding area.

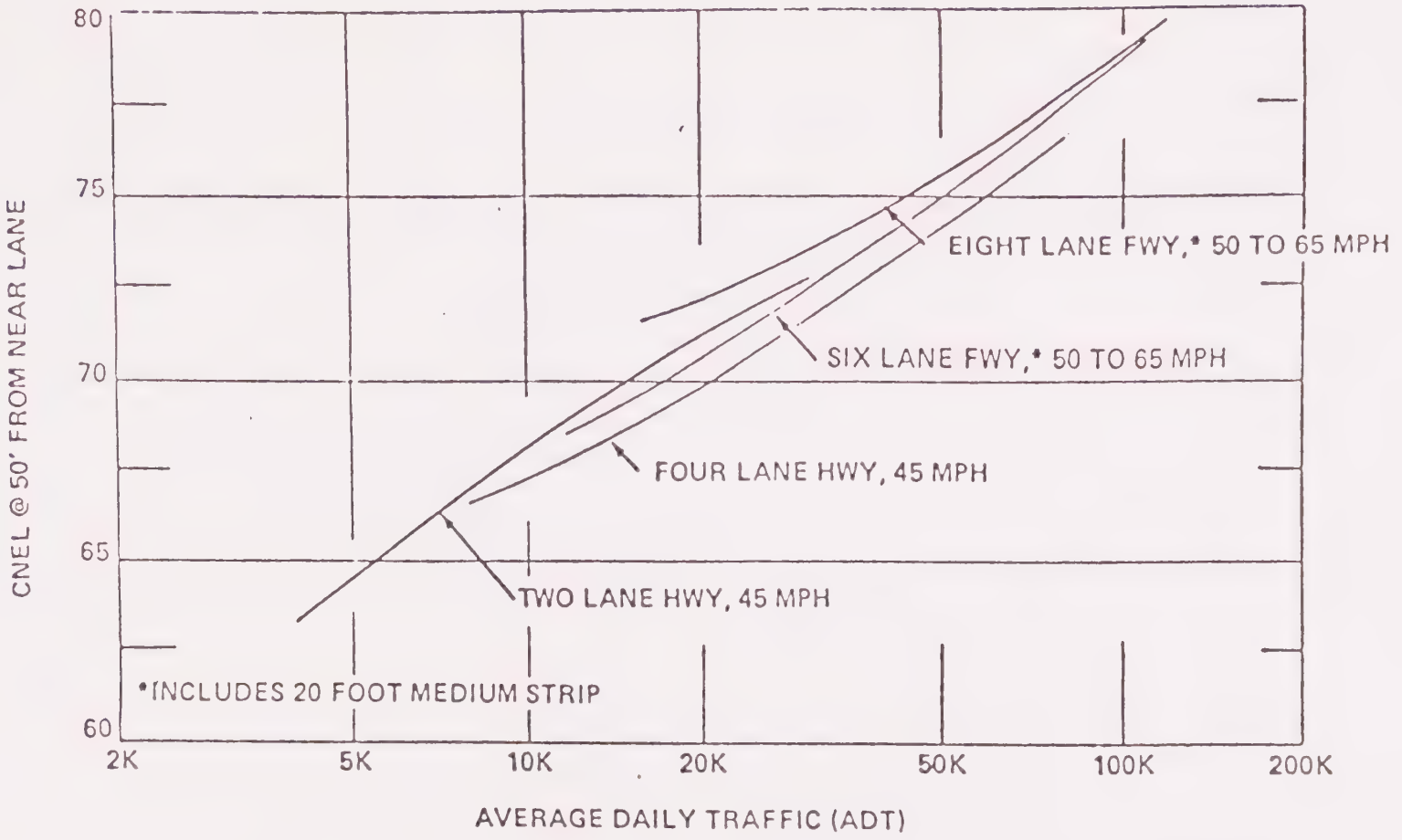

FIGURE III-1. Community Noise Equivalent Level for Traffic Noise (Heavy Truck to Auto Mix of 4%)

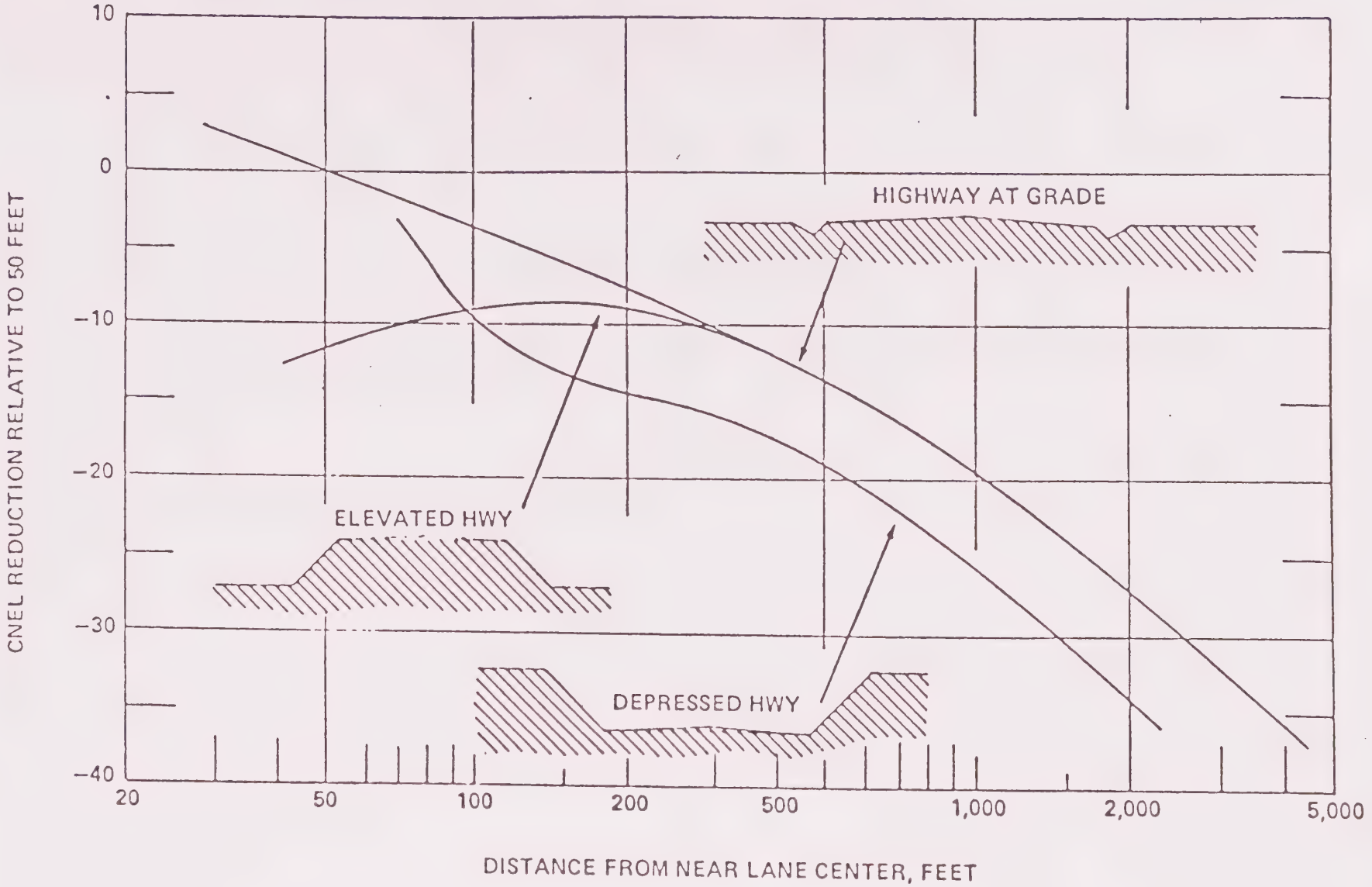

FIGURE III-2. CNEL Reduction for Various Highway Configurations

APPENDIX IV

Noise Measurement Sites and Analysis of the Data

APPENDIX IV

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METHODOLOGY

Noise measurements were obtained by use of precision sound level meters (noise monitors, per American National Standard ANSI S1.4-1971). The following items of equipment were used during the measurement phase of the study:

1. A-Weighted Noise Level - Analysis

   Community Noise Level Analyzer, B & K Type 4426
   Portable Noise Monitor, BBN Type 614, Serial Number 773504
   Portable Noise Monitor, BBN Type 614, Serial Number 773506

2. Acoustic Calibration

   Acoustic Calibrator, B & K Type 4230 (94 dB @ 1000 Hz)
   Acoustic Calibrator, GR Type 1567 (114 dB @ 1000 Hz)

3. Graphic Level Recording

   Graphic Level Recorder, B & K Type 2306

At each site, the measurement was obtained at the nearest existing or proposed residential unit to the noise source. Generally, ten minute measurements were obtained. This is a statistically significant period of time for relatively consistent noise sources (such as traffic) and yields results which are approximately equivalent to a one hour measurement.

Table IV-1. Noise Measurements, City of Moorpark

Pos. No.	Location	Date	Time	Duration	Noise Source	A-Weighted Sound Level, dB(A)[1] Morning L50	Morning L10	Morning Leq	Midday L50	Midday L10	Midday Leq	Evening L50	Evening L10	Evening Leq	Est or Meas, CNEL[2]
1	S. W. Corner of Los Angeles Avenue and Tierra Rejada Road, 36' S. of Los Angeles	3-27-86	9:53 am	10 min	Traffic on Los Angeles Avenue	70.5	78.0	74.3	--	--	--	--	--	--	
		3-27-86	12:30 pm	10 min		--	--	--	70.0	79.0	75.2	--	--	--	
		3-25-86	6:15 pm	10 min		--	--	--	--	--	--	70.0	76.3	73.5	74.5 dB
2	Mountain Trail Street, 172' W. of Summerglen	3-27-86	7:20 am	10 min	Traffic on Mountain Trail Street	58.0	67.0	63.4	--	--	--	--	--	--	
		3-27-86	2:00 pm	10 min		--	--	--	57.8	69.0	66.5	--	--	--	
		3-26-86	5:45 pm	10 min		--	--	--	--	--	--	46.3	55.5	53.4	<60.0
3	Parking lot, Poindexter School, 146' S. of Poindexter Avenue	3-27-86	9:40 am	10 min	Traffic on Poindexter	49.5	57.5	53.1	--	--	--	--	--	--	
		3-26-86	12:00 pm	10 min		--	--	--	51.5	56.8	53.2	--	--	--	
		3-27-86	3:50 pm	10 min		--	--	--	--	--	--	51.8	61.3	57.3	<60.0
4	E. of the Auditorium, Moorpark Memorial High School, 400' W. of Route 23, 200' S. of Casey Road	3-27-86	9:05 am	10 min	Traffic on Route 23	52.5	57.5	54.6	--	--	--	--	--	--	
		3-26-86	11:20 am	10 min		--	--	--	54.5	59.5	55.8	--	--	--	
		3-26-86	3:15 pm	10 min		--	--	--	--	--	--	49.0	56.0	51.7	<60.0
5	Parking lot, Moorpark Library, 71' W. of Route 23	3-27-86	9:20 am	10 min	Traffic on Route 23	59.0	70.8	65.9	--	--	--	--	--	--	
		3-26-86	11:43 am	10 min		--	--	--	63.8	70.5	66.4	--	--	--	
		3-27-86	4:05 pm	10 min		--	--	--	--	--	--	61.5	68.0	64.7	65.0
6	Parking lot, Moorpark Unified School District Office adjacent to the Flory School 430' N. of Los Angeles Avenue, 20' E. of Flory Avenue	3-27-86	8:50 am	10 min	Traffic on Los Angeles Avenue and Flory Avenue	50.3	57.5	54.6	--	--	--	--	--	--	
		3-26-86	12:45 pm	10 min		--	--	--	53.8	58.5	57.5	--	--	--	
		3-27-86	3:20 pm	10 min		--	--	--	--	--	--	53.3	56.8	55.2	<60.0
7	Parking lot, Moorpark Unified School District Office S. of the Office Building, 246' N. of Los Angeles Ave.	3-27-86	8:37 am	10 min	Traffic on Los Angeles Avenue and Flory Avenue	57.3	62.0	58.5	--	--	--	--	--	--	
		3-26-86	12:25 pm	10 min		--	--	--	55.3	62.3	60.4	--	--	--	
		3-25-86	5:40 pm	10 min		--	--	--	--	--	--	54.8	58.8	56.1	<60.0
8	Parking lot, Moorpark Unified School District Office adjacent to Los Angeles Avenue, 42' N. of Los Angeles Avenue	3-27-86	8:25 am	10 min	Traffic on Los Angeles Avenue	69.0	75.0	71.1	--	--	--	--	--	--	
		3-26-86	1:05 pm	10 min		--	--	--	66.5	73.3	69.1	--	--	--	
		3-27-86	3:35 pm	10 min		--	--	--	--	--	--	67.5	73.8	69.9	73.0
9	Front balcony, 104 E. Los Angeles Avenue	3-26-86	9:00 am	24 hours	Traffic on Los Angeles Avenue	69.0	77.0	73.8	--	--	--	--	--	--	
		3-26-86	12:00 pm			--	--	--	68.0	76.0	72.7	--	--	--	
		3-25-86	5:00 pm			--	--	--	--	--	--	68.0	73.0	70.6	74.2
10	Rear yard, 13348 E. Quail Summit Road	3-27-86	7:00 am	24 hours	Traffic on surrounding arterials	49.0	53.0	50.4	--	--	--	--	--	--	
		3-27-86	11:00 am			--	--	--	45.0	51.0	47.8	--	--	--	
		3-26-86	5:00 pm			--	--	--	--	--	--	44.0	50.0	47.4	50.1

Table IV-1. (continued)

Pos. No.	Location	Date	Time	Duration	Noise Source	A-Weighted Sound Level, dB(A)[1] Morning L50	Morning L10	Morning Leq	Midday L50	Midday L10	Midday Leq	Evening L50	Evening L10	Evening Leq	Est or Meas, CNEL[2]
11	Parking lot, Peach Hill School, 69' N. of Christian Barrett	3-27-86	7:40 am	10 min	Traffic on Christian Barrett, Peach Hill Road, and Tierra Rejada	50.3	51.8	50.4	--	--	--	--	--	--	
		3-27-86	1:45 pm	10 min		--	--	--	50.5	55.3	53.4	--	--	--	
		3-26-86	5:25 pm	10 min		--	--	--	--	--	--	42.3	45.8	43.3	<60.0
12	S. W. Corner of Peach Hill Road and Mill Valley Road 8' S. of Peach Hill Road	3-26-86	9:40 am	10 min	Traffic on Peach Hill Road	53.5	69.3	64.1	--	--	--	--	--	--	
		3-27-86	12:47 pm	10 min		--	--	--	55.5	67.0	62.2	--	--	--	
		3-26-86	6:10 pm	10 min		--	--	--	--	--	--	61.3	71.0	66.3	64.0
13	N. W. Corner of Moorpark Road and Christian Barrett	3-26-86	7:25 am	10 min	Traffic on Moorpark Road	63.0	72.3	67.9	--	--	--	--	--	--	
		3-27-86	1:05 pm	10 min		--	--	--	53.8	69.0	65.5	--	--	--	
		3-25-86	6:35 pm	10 min		--	--	--	--	--	--	60.0	68.5	64.2	66.0
14	S. E. Corner of Tierra Rejada Road and Southampton Road, 15' S. of Tierra Rejada	3-27-86	8:05 am	10 min	Traffic on Tierra Rejada	56.0	71.5	66.6	--	--	--	--	--	--	
		3-27-86	1:20 pm	10 min		--	--	--	50.5	69.5	64.4	--	--	--	
		3-27-86	4:30 pm	10 min		--	--	--	--	--	--	57.8	69.8	65.2	66.0
15	Rear yard, 800 Hedyland Court	3-27-86	7:00 am	24 hours	Traffic on Los Angeles Avenue and activity at Canejo Ready Mix	55.0	58.0	56.2	--	--	--	--	--	--	
		3-27-86	11:00 am			--	--	--	53.0	57.0	57.9	--	--	--	
		3-27-86	4:00 am			--	--	--	--	--	--	50.0	56.0	55.1	58.8
16	Los Angeles Avenue adjacent to Canejo Ready Mix, 20' S. of Los Angeles Ave.	3-26-86	8:10 am	10 min	Activity at Canejo Ready Mix; Traffic on Los Angeles Avenue	71.3	77.3	74.2	--	--	--	--	--	--	
		3-26-86	1:20 pm	10 min		--	--	--	71.0	78.0	74.5	--	--	--	
		3-27-86	5:00 pm	10 min		--	--	--	--	--	--	72.0	77.0	74.1	78.0
17	Penn Street, adjacent to Los Angeles Avenue, 52' N. of Los Angeles Avenue	3-27-86	10:15 am	10 min	Traffic on Los Angeles Avenue	63.8	74.5	70.3	--	--	--	--	--	--	
		3-26-86	1:45 pm	10 min		--	--	--	64.0	72.5	68.2	--	--	--	
		3-27-86	5:20 pm	10 min		--	--	--	--	--	--	66.3	71.3	68.2	70.0
18	N. E. Corner of Campus Park Road and Marquette Street, 32' N. of Campus Park Road	3-26-86	8:40 am	10 min	Traffic on Campus Park Road	51.3	64.3	60.7	--	--	--	--	--	--	
		3-27-86	11:40 am	10 min		--	--	--	50.0	60.8	57.0	--	--	--	
		3-27-86	5:55 pm	10 min		--	--	--	--	--	--	60.0	67.5	68.7	63.0
19	Rear yard, 15750 Los Angeles Avenue, Lot 234, Villa del Arroyo Mobile Home Estates	3-26-86	9:00 am	24 hours	Trains on S.P.T. Co. Railroad and traffic on Los Angeles Avenue	48.0	57.0	62.8	--	--	--	--	--	--	
		3-26-86	11:00 am			--	--	--	49.0	58.0	59.2	--	--	--	
		3-25-86	6:00 pm			--	--	--	--	--	--	47.0	56.0	62.2	66.9

Table IV-1. (continued)

Pos. No.	Location	Date	Time	Duration	Noise Source	A-Weighted Sound Level, dB(A)[1] Morning L50	Morning L10	Morning Leq	Midday L50	Midday L10	Midday Leq	Evening L50	Evening L10	Evening Leq	Est or Meas, CNEL[2]
20	Bookstore parking lot,	3-26-86	8:55 am	10 min	Traffic on Campus Road	45.0	49.3	47.0	--	--	--	--	--	--	
	Moorpark College, 70' W. of	3-27-86	11:05 am	10 min		--	--	--	44.5	49.3	46.9	--	--	--	
	Campus Road	3-27-86	5:40 pm	10 min		--	--	--	--	--	--	41.8	47.0	46.1	<60.0

NOTES

1. L50 and L10 are the sound levels exceeded during 50% and 10% of the measurement period, respectively. Leq is the equivalent sound level. "Morning" refers to the hours of 7:00 am to 10:00 am, "Midday" refers to the hours from 11:00 am to 2:00 pm, and "Evening" refers to the hours from 4:00 pm to 7:00 pm.

2. Value in "CNEL" column is estimated from measured Leq values. The value takes into account the barrier effects of adjacent structures as well as the topography. Therefore, the measured value differs from that indicated on the CNEL contour maps.

Table IV-2. Summary of Measured or Estimated Noise Levels at School Locations, City of Moorpark, March 1986

School	Equivalent Sound Level, Leq
Chaparral Middle School	57.3
Flory School	57.5
Moorpark Community College	47.0*
Moorpark Community School (Continuation High School)	71.1
Moorpark Memorial High School	55.8
Moorpark Union Elementary School	60.4
Peach Hill School	53.4

* The measured level may not be representative due to the low traffic volume on Campus Road resulting from the Spring break.

Figure IV-1. Noise Measurement Positions

NOTE: Refer to 500 scale map at the Planning Department